ABSTRACT

STUDY COMPARISON OF THE INFLUENCE OF THE DECREASE OF kV AGAINST DOSE AND IMAGE QUALITY FROM MULTIPLE MODALITIES OF MULTI DETECTOR CT SCAN

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This study aims to know the effect of a decrease in the 120 *kV*, 100 *kV* and 80 *kV* the estimated value of *DLP* (*Dose Length Product*) and image quality in *CT* 16 *slice*, 64 *slice* and 128 *slice* by applying the same parameter values on several factors eksposi (*mA*), *pitch*, *beam width* and *rotation time*.

The method used in this research is a comparative descriptive method with quantitative approach, using 3 *kV* different variations on *CT Scan* 16, 64 and 128 *slice* and produce nine samples. With media research is a *head phantom*. Positioning the *head phantom* on the examining table and set center point like a *CT scan* of the head. Next, fill the experimental data, each experiment 1, 2, and 3. Then change the 3 *kV* different variations and fills the same parameter values on each trial. After the *scanning* process.

As a proof based on the calculation results can be seen that the "Sig" is smaller than the error rate (α) = 0.05 then it can be concluded that refused so with a confidence level of 95% can be said that *kV* significant effect on *DLP* on *CT Scan* 16, 64 and 128 *slice*. While the image quality assessment questionnaires to PPDS Radiology can be concluded that the results of the assessment questionnaires in terms of resolution and the anatomical structure of the bones clearly with the largest average are at 120 *kV* with the criteria of excellent results and vice versa average yield was lowest for the 80 *kV* with poor results as well.

From the results of this research can be concluded that the decline *kV* have an impact on the estimated value of *DLP*. So, the smaller kV is given, then the estimated value of *DLP* is getting smaller. And the greater the value of *kV* is given, then the greater the estimated value of *DLP*.

Keyword: *kV*, *mA*, *pitch*, *beam width*, *rotation time*, *DLP, Slice*